UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/636,062	08/06/2003	Christian Maciocco	42.P17373	1018

7590 09/26/2008 R. Alan Burnett BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP Seventh Floor 12400 Wilshire Boulevard Los Angeles, CA 90025-1026	**EXAMINER** BELLO, AGUSTIN

ART UNIT	PAPER NUMBER
2613	

MAIL DATE	DELIVERY MODE
09/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 June 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8,10-30 and 36-40</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8,10-30 and 36-40</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-8, 10-30, and 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Pung (U.S. Patent Application Publication No. 2002/0150099) in view of Xiong (U.S.

Patent No. 6,671,256), Veeraraghavan (U.S. Patent Application Publication No. 2003/0053475),

and Pan (Patent No. US 6,760,306 B1)

        Regarding claim 1, 20, and 28, Pung teaches a method for establishing a coarse-grained

reservation of a lightpath traversing a plurality of connected lightpath segments between source

and destination nodes in an optical switched network, comprising: making a soft reservation of

node resources supporting respective path segments from among the plurality of path

segments (paragraph [0019]), the soft reservation of the node resources corresponding to a

future scheduled time period (inherent in a reservation) for which the path is requested to be

reserved; determining if adequate node resources are available for reservation during the

future scheduled time period to support traversal of the entire path (paragraph [0049]); and

making a hard reservation of the node resources corresponding to the future scheduled time

period if adequate node resources are determined to be available (paragraph [0019]). Pung

differs from the claimed invention in three manners.

First, Pung fails to specifically teach that the method is applicable to lightpaths.

However, Xiong teaches that applying a reservation method to a plurality of light paths is well

known in the art (column 2 lines 13-25, column 7 lines 22-35, Figure 7). One skilled in the art

would have been motivated to apply Pung's reservation method to Xiong's plurality of lightpaths

in order to efficiently route multicast signals according to multiple QoS constraints (paragraph

[0014] of Pung). Therefore, it would have been obvious to one skilled in the art at the time the

invention was made to apply Pung's reservation method to Xiong's plurality of lightpaths.

Second, Pung differs from the claimed invention in that Pung fails to specifically teach

that the future scheduled time period includes a scheduled start time. However, Veeraraghavan

teaches that this concept is well known in the art (paragraphs [0097], [0099], [0100], [0103],

[0114], [0118], and [0119]). One skilled in the art would have been motivated to include a

scheduled start time in order to ensure that resources are available at a specific time, to prevent

other resources from being assigned to other nodes at a specific time (paragraph [0116]), and to

allow the transfer to be completed at the earliest available opportunity (paragraph [0118] of

Veeraraghavan). Therefore, it would have been obvious to one skilled in the art at the time the

invention was made to include a scheduled start time as taught by Veeraraghavan in the future

scheduled time period of Pung.

Third, Pung differs from the claimed invention in that Pung fails to specifically teach

adding data pertaining to the soft/hard reservation to a table stored at a node coupled between the

source and destination nodes, wherein the data pertaining to the soft/hard reservation includes the

scheduled start time and wherein the table includes data pertaining to a plurality of soft hard

reservations. However, Pan teaches that the concept of storing data pertaining to reservations at

nodes is well known in the art (column 1 lines 8-10; column 4 lines 11-22; column 6 lines 5-14, 25-40; column 10 lines 31-34). One skilled in the art would have been motivated to store data pertaining to nodes in order to store network service reservation over time periods or over a range of values (column 1 lines 22-33). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to add data pertaining to the soft/hard reservation to a table stored at a node coupled between the source and destination nodes, wherein the data pertaining to the soft/hard reservation includes the scheduled start time and wherein the table includes data pertaining to a plurality of soft hard reservations.

Regarding claims 2, 3, 22, and 23, Pung differs from the claimed invention in that Pung fails to specifically teach that the optical switched network comprises a photonic burst switched network or a wavelength division multiplexed PBS network. However, both types of optical switched networks are well known in the art and Official Notice is given to that effect. One skilled in the art would have been motivated to employ Pung's reservation methodology to a photonic burst switched network or a wavelength division multiplexed PBS network in order to efficiently route multicast signals according to multiple QoS constraints (paragraph [0014]).

Regarding claim 4, Pung teaches storing resource reservation data at each node, including resource reservation status indicia indicating whether a resource has a corresponding soft or hard reservation (paragraph [0044], paragraph [0048], paragraph [0057]; reference numeral S508 in Figure 5A), and time values specifying the scheduled start time and a scheduled end time of the future scheduled time period (inherent in a reservation of Pung and further taught by Xiong column 4 lines 66-67; column 5 lines 1-15; column 6 lines 25-30; also taught by Veeraraghavan

paragraphs [0097], [0099], [0100], [0103], [0114], [0118], [0119] and Pan as discussed in the

rejection of claim 1).

Regarding claim 5 and 27, Pung teaches passing a resource reservation request message

between the nodes connected to the lightpath segments in a downstream traversal of the

lightpath (paragraph [0029], paragraph [0042]), the resource reservation request message

including resource reservation information (e.g. "QoS constraints" in paragraph [0042]);

extracting the resource reservation information from the resource reservation request message

(e.g. inherent in "constraints are tested" of paragraph [0042]); determining, based on existing

resource reservation data for a given node, whether adequate resources are available during

the future scheduled time period (e.g. "ensure that a multicast path satisfying the QoS constraints

may include this node" of paragraph [0042]); and making a soft reservation for a node

resource the resource is determined to be available for the future scheduled time period (e.g.

"tentatively reserved" in paragraph [0042]).

Regarding claims 6, 7, and 24, Pung differs from the claimed invention in that Pung fails

to specifically teach the use of GMPLS based labels. However, the use of these labels is well

known in the art and Official Notice is given to that effect. One skilled in the art would have

been motivated to employ a GMPLS based label in order to provide a framework for dynamic

provisioning of connection in the optical network. Therefore, it would have been obvious to one

skilled in the art at the time the invention was made to use GMPLS labels in the system of Pung.

Regarding claims 8, 11, 25, and 26, Pung differs from the claimed invention in that Pung

fails to specifically teach that the resource reservation request message comprises a Path/Resv

message having a format based on an extension to the RSVP-TE (ReSerVation Protocol - Traffic

Engineering) signaling protocol. However, PATH/RESV messages based on extensions to the

RSVP-TE protocol are well known in the art and Official notice is given to that effect. One

skilled in the art would have been motivated to use PATH/RESV messages in order to allow for

bandwidth reservation in a peer-to-peer environment. Therefore, it would have been obvious to

one skilled in the art at the time the invention was made to use PATH/RESV messages having a

format based on an extension to the RSVP-TE in the system of Pung.

Regarding claim 10, Pung teaches passing a resource reservation response message

(e.g. "confirmation" in paragraph [0029], paragraph [0043]) between the nodes coupled to the

lightpath segments in an upstream traversal of the lightpath, the resource reservation request

message including resource reservation response information (inherent); extracting, at each

node, the resource reservation response information from the resource reservation response

message; and changing, at each node, the soft reservation for the node resource to a

hard reservation (e.g. "confirmed" in paragraph [0047], paragraph [0058]).

Regarding claim 12, the combination of Pung and Xiong teaches building a list of

potential lightpaths between the source and destination nodes (e.g. "Req (A, x, y)" in Figure 12a

of Pung); selecting a first potential lightpath in the list (e.g. "Req (A, a, b)" of Pung);

determining if sufficient resources are available to reserve node resources supporting

lightpath segments defined by the first potential lightpath for the scheduled time period (e.g. QoS

test of paragraph [0100] of Pung); and processing a next potential lightpath in the list (e.g.

"Req(A,b,d)" in Figure 12A of Pung) to determine if sufficient resources are available to

reserve node resources supporting lightpath segments defined by the next lightpath for the

future scheduled time period if it is determined that resources supporting the lightpath

segments of the first potential lightpath are insufficient (e.g. "Req(A,b,c)" in Figure 12A of Pung) ; and repeating the previous operation for subsequent next potential lightpaths in the list until either a lightpath having sufficient resources is identified (e.g. "Selected Path" in Figure 12A; paragraph [0042] of Pung) or the list is exhausted (paragraph [0103] of Pung). Xiong further teaches that each of these steps can occur at one or more nodes between the source node and the destination node (column 5 lines 55-64; column 6 lines 34-46).

Regarding claim 13, Pung teaches prioritizing the potential lightpaths in the list based on at least one transmission-related criterion (paragraph [0009] - paragraph [0011]).

Regarding claim 14, Pung teaches dynamically reprioritizing the potential lightpaths in the list in response to a detected change in network transmission conditions (paragraph [0010], paragraph [0044]).

Regarding claim 15, Pung differs from the claimed invention in that Pung fails to specifically teach that the potential light paths are prioritized based on traffic balancing considerations. However, prioritizing light paths based on traffic balancing considerations is well known in the art and Official Notice is given to that effect. One skilled in the art would have been motivated to prioritizing light paths based on traffic balancing considerations in order to efficiently balance the resources of the network among a plurality of users. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to prioritizing light paths based on traffic balancing considerations.

Regarding claim 16, Pung teaches dynamically reprioritizing the potential lightpaths in the list in response to a detected change in network topology (paragraph [0010]).

Regarding claim 17, Pung teaches that the determination of whether adequate

resources are available at a given node comprises: aggregating any existing reservations for

the node resource corresponding to a specified bandwidth and the future scheduled time

period to obtain an existing resource allocation; adding the bandwidth percentage

corresponding to a resource reservation request to the existing resource allocation to obtain a

requested allocation for the node resource; determining if the requested allocation exceeds a

threshold (paragraph [0049]).

Regarding claim 18, Pung teaches that partial use of node resource may be reserved (e.g.

part of the overall resources of the node).

Regarding claim 19, Pung teaches the partial use comprises a bandwidth percentage use

of a lightpath segment (inherent in the sharing of node resources).

Regarding claim 21, Pung teaches that execution of the instructions further performs

the operation of storing resource reservation data on one of the first storage device or a second

storage device operatively coupled to said at least one processor, said resource reservation

data including resource reservation status indicia indicating whether a resource has a

corresponding soft or hard reservation (paragraph [0040], paragraph [0044-0047]), and time

values specifying the start and end of the scheduled time period (inherent in a reservation of

Pung and further taught by Xiong column 4 lines 66-67; column 5 lines 1-15; column 6 lines 25-

30).

Regarding claim 29 and 30, Pung teaches that said at least one processor includes a

network processor or a control processor (paragraph [0040]).

Regarding claims 36 and 39, the combination of references and Pan in particular teaches that the table stored at the node includes a key for each of a plurality of the table, wherein each record corresponds to a soft or hard reservation (column 4 lines 15-22).

Regarding claim 37, the combination of references and Pan teaches that making the soft reservation of node resources includes receiving a Path message having a format based on an extension to the RSVP-TE signaling protocol, wherein the key contains information corresponding to a session object of the Path message (column 3 lines 59 – column 4 lines 1-22).

Regarding claims 38 and 40, the combination of references differs from the claimed invention in that it fails to specifically teach that the key is derived from a combination of data fields included in the table to enable a rapid look-up of soft reservation and hard reservation, the data fields including a plurality selected from the list consisting of: an input fiber port, and an input wavelength, and a lightpath segment ID. However, Pan discloses that authentication data can include requestor's IP address, thereby suggesting a key derived from data fields included in the table. Furthermore, one skilled in the art would clearly have recognized that any of the data fields included in the reservation table could have been used to authenticate the user, including an input fiber port, and an input wavelength, and a lightpath segment ID. One skilled in the art would have been motivated to do so in order to specifically identify the origination of requests. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to derive the key from a combination of data fields included in the table to enable a rapid look-up of soft reservation and hard reservation, the data fields including a plurality selected from the list consisting of: an input fiber port, and an input wavelength, and a lightpath segment ID.

Response to Arguments

3.   Applicant's arguments with respect to the claims have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The

examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agustin Bello/
Primary Examiner, Art Unit 2613